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November 10, 2011

Ms. Deanna Keysor
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VIA E-MAIL

Re: *Edge Capture L.L.C. and Edge Specialists, L.L.C. v. Barclays Bank PLC, et al.*
United States District Court, Northern District of Illinois, Eastern Division
Case No. 1:09-cv-01521
Our File No. 124313.0002

Dear Deanna:

This letter responds to your November 2, 2011 letter to which you enclosed Wolverine's flowchart (W00001563-W00001566) and addresses several issues related to Wolverine's initial disclosures, dates for the 30(b)(6) deposition of Wolverine, and issues relating to Dr. Nelken.

Wolverine's Flowchart

Edge received Wolverine's four-page, high-level flowchart on November 2, 2011, more than four weeks after Edge's October 3, 2011 letter in which it carefully laid out the categories of information it sought, per the Court's rulings on August 9 and September 27, 2011. Given the high-level nature of this document and Wolverine's previous representations that it would complete the flowchart within "approximately two weeks" (Oct. 4, 2011 Letter from D. Keysor to S. Brodie), we are somewhat perplexed as to why it took Wolverine more than twice as long as it represented to produce the chart.

The delay is curious in light of the fact that Wolverine failed to "give [Edge] what they want" (Tr. of Aug. 9, 2011 Hearing at 31), even after Edge narrowed its request and provided specific guidance on what it was "looking for" (*id.* at 33). In Edge's October 3, 2011 letter, we requested three discrete categories of information: (1) physical components of the accused system, meaning "a depiction of the layout of the physical components (at a computer, router, or server level) of the systems that were involved in or connected to each of the five trades cited in the Amended Complaint" and information "show[ing] how those physical components are connected to each other"; (2) functional components of the system; and (3) order and timing of steps. (A copy of Mr. Brodie's October 3, 2011 letter is attached for your convenience.)

At best, Wolverine's flowchart addresses part of category (2), the functional components of the system, at a high level. Wolverine's production does not disclose information about the physical

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arrangement of the system, the types of data structures used and how they are used, mid-level specifics regarding how the system decided to make the five trades cited in the Amended Complaint, including the inputs it uses to make those decisions, nor the order or timing of steps.

The disclosures should have included, by way of example only:

- A legend defining all acronyms used in the flowchart;
- Timing information for each step shown in the flow chart for each of the five trades, including whether there were significant differences in the timing among the five trades cited in the Amended Complaint;
- Mid-level descriptions for each of the functional components disclosed in the flowchart;
- Where each functional component is physically located;
- What took place in the dash-dotted box on page 2 for each of the five trades cited in the Amended Complaint;
- Whether, what kind of, and how data structures were used in connection with the five trades cited in the Amended Complaint;
- Whether and how interpolation or extrapolation was used in connection with the five trades cited in the Amended Complaint;
- The specific market information for the options and underlying equities that was used in connection with the five trades cited in the Amended Complaint;
- The “option theoretical values” that were used in connection with the five trades cited in the Amended Complaint;
- The operating system(s) used by each of the computer system(s) shown in the flowchart; and
- Whether for each of the five trades cited in the Amended Complaint, Wolverine submitted an order or a quote when its system made the decision to trade.

This information is relevant to the claims of the patents-in-suit, including claims already identified in the Amended Complaint. For example, claim 21 of the ‘833 patent and claims 21 and 22 of the ‘629 patent, identified in the Amended Complaint, relate to the physical arrangement of system elements, and claim 1 of the ‘629 patent, also identified in Edge’s Amended Complaint, includes limitations related to the use of data structures, such a lookup tables.

Further, contrary to Wolverine’s repeated contentions that Edge is limited to only those claims cited in the Amended Complaint, the Local Patent Rules instead make clear that the identification of asserted claims is part of the initial disclosure process -- specifically, LPR 2.2(a)

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states that the Initial Infringement Contentions shall include "identification [of] each claim of each patent-in-suit that is allegedly infringed by the opposing party" The Local Patent Rules contemplate that Edge may assert additional claims based on Wolverine's initial disclosures under LPR 2.1(b)(1). Wolverine may not artificially limit disclosure of information relevant to the operation and function of the systems used to complete the five trades cited in the Amended Complaint, which it undoubtedly has done by ignoring Edge's specific requests for technical information. As such, Wolverine's four-page, high-level flowchart is insufficient, and Wolverine continues to fall short of its initial disclosure obligations under LPR 2.1(b)(1). Edge will seek answers to at least the questions above during the 30(b)(6) deposition of Wolverine, as the same relevant categories of information fall within the 30(b)(6) topics noticed by Edge.

Wolverine's 30(b)(6) Deposition

Edge received on November 2, 2011 Wolverine's objections to its 30(b)(6) topics, which Edge provided to Wolverine on September 6, 2011, October 3, 2011 and October 14, 2011. Edge's deposition topics are proper as prepared and served by Edge. The topics were carefully drafted to narrowly obtain specific technical information regarding Wolverine's trading system(s) as it existed on January 27, 2009 and the trading activity connected to the five trades cited in the Amended Complaint. Wolverine's objections are improper for at least the same reasons as its high-level flowchart is insufficient. In other words, Wolverine's objections are designed to impermissibly block Edge from obtaining discovery to which it is entitled to under the Local Patent Rules and the Court's governing orders. Wolverine is attempting to prevent Edge from obtaining the relevant information it "want[s]" and is "looking for" about a "black box" (Tr. of Aug. 9, 2011 Hearing at 31 and 33). We expect Wolverine's corporate designees to be fully prepared to testify about the facts relating to the 30(b)(6) topics as noticed and served by Edge. Indeed, Wolverine has had over two months to prepare its witnesses to testify on those topics, which are narrowly tailored to the relevant trading system(s) and the five trades cited in the Amended Complaint.

Edge has also received Wolverine's November 3, 2011 e-mail proposing three dates in December for the depositions. Edge does not understand why these depositions should be delayed until December. Wolverine has had Edge's 30(b)(6) deposition topics since early September, has had over a month to prepare its four-page, high-level flowchart, which it produced on November 2, 2011, and received notice for the deposition for the month of November. Edge does not see a reason why the depositions cannot take place in November.

That said, to avoid further delay by Wolverine, Edge has already taken and will continue to take steps to accommodate the dates Wolverine has proposed for the depositions, specifically Steve Wooden on December 6, 2011; Mike Gorczowski on December 7, 2011; and Jim Michuda on December 16, 2011.

Costs

Beginning on October 3, 2011, Edge has repeatedly asked Wolverine for updates regarding the cost of producing the high-level flowchart. On October 26, 2011, counsel for Wolverine represented that it would "provide [Edge] with the final cost figure(s) once the chart has been produced and the final production costs can be ascertained." To date, no cost figures have been revealed, nor has Wolverine disclosed the requested identities of the people involved in creating

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the flowchart, their titles, and their billing rates. Edge requests that Wolverine make good on its representations and provide Edge with a detailed and itemized bill of costs for the four-page, high-level flowchart. We cannot imagine, after reviewing the flowchart, that it took Wolverine very long to prepare or resulted in meaningful costs.

Dr. Nelken

Edge received Wolverine's November 2, 2011 letter in which it informed Edge that Dr. Nelken "may not be given access to the chart, nor may he attend the Rule 30(b)(6) depositions."

Wolverine's purported objections to Dr. Nelken's access to information are misplaced for at least three reasons.

First, Dr. Nelken is entitled to see information designated as Confidential, and Wolverine's flowchart is at such a high level that it would not "significantly harm [Wolverine's] competitive position" (Dkt. #241 at 2) and therefore does not merit the Highly Confidential designation. Indeed, the flowchart does not disclose source code or underlying pricing algorithms, much less the specifics of those two categories of information, that the system(s) may have used. Designating the flowchart Confidential under the Agreed Protective Order would provide Wolverine sufficient protection.

Second, neither disclosure of the four-page, high-level flowchart to Dr. Nelken, nor bringing Dr. Nelken to the 30(b)(6) deposition of Wolverine poses any credible threat to Wolverine.

Source code and pricing algorithms have not been and will not be disclosed by Wolverine in connection with its initial disclosures, and Dr. Nelken is not in the business of designing automated options price-taking or automated options price-making systems. The Court foreshadowed this precise issue when it stated:

I want to be satisfied that Dr. Nelken understands the obligations he's undertaking and that everybody feels comfortable that he has the degree of integrity that he will live up to it. . . . [A]ll [the Court is] saying to Mr. Brodie is initially Dr. Nelken can see confidential but [the Court is] not tying his hands if he comes back to me and says, look, they've made highly confidential things that Dr. Nelken doesn't even do any business in or has no ability to hurt anybody in, you know, [the Court will] consider it as long as he's – he's still going to be bound by the protective order at the end of the day and I think asking Mr. Brodie to tie his hands in advance on Dr. Nelken as it relates to highly confidential without him knowing what you're designating specifically as highly confidential is not fair, is not fair.

Tr. of Sept. 27 Hearing at 69-70. As contemplated by the Court, Dr. Nelken has carefully reviewed and signed the Agreed Protective Order. Dr. Nelken is aware of the serious consequences that would result from breaching the Agreed Protective Order. The risk of "inadvertent disclosure" of pricing algorithms, upon which Wolverine primarily rested its objections to Dr. Nelken, does not apply here because Edge will not inquire about source code or pricing algorithms at the 30(b)(6) deposition. Although Edge has no reason to believe this will

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happen, if it appears that disclosure of pricing algorithms may occur at some point during the 30(b)(6) depositions, Edge is happy to discuss with Wolverine removing Dr. Nelken from the room for those portions of testimony. Edge therefore contends that Wolverine should consent to this specific and limited disclosure request. It would be unfortunate to have to involve the Court in this matter.

Third, although Edge would need to bring a motion to resolve a dispute concerning Dr. Nelken's access to information designated Highly Confidential, Wolverine was still under an obligation to respond to Edge within 10 days of receiving the disclosure request, as contemplated by paragraph 11 of the Agreed Protective Order. Wolverine failed to do so, and therefore it has waived its right to maintain an objection to Edge's specific and narrow disclosure request. This especially holds true given that Wolverine repeatedly failed to respond to Edge's inquiries as to whether or not it would object to Dr. Nelken's access to information. Indeed, Wolverine had at least three chances to do so. Edge informed Wolverine on October 3, 2011 that it intended to share the flowchart with Dr. Nelken and bring him to the 30(b)(6) deposition. Wolverine did not raise an objection to this request in its October 4, 2011 response. Edge followed up on October 7 and specifically asked Wolverine, again, to inform Edge by October 10 whether it would object to Edge's limited and specific disclosure request, so that if there was an objection, a meet-and-confer could be held in a timely fashion. Wolverine did not respond to this inquiry by the requested date either. Finally, Edge again informed Wolverine on October 14, 2011 that it intended to share the flowchart with Dr. Nelken and bring him to the deposition, and Wolverine did not respond. It was not until Wolverine served its flowchart on November 2, 2011--over four weeks after Edge made its disclosure request--that Wolverine finally advanced a written objection to Dr. Nelken having access to the four-page, high-level flowchart and to his presence at the 30(b)(6) deposition.

Edge now renews its request to meet-and-confer with Wolverine to attempt to resolve this matter between the parties and without involving the Court. Edge proposes holding a telephonic conference on Monday, November 14, 2011 at 10 a.m. Central time. Please advise us as to your availability.

Sincerely,

ROBINS, KAPLAN, MILLER & CIRESI L.L.P.



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October 3, 2011

VIA E-MAIL

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Re: *Edge Capture L.L.C. and Edge Specialists, L.L.C. v. Barclays Bank PLC, et al.*
United States District Court, Northern District of Illinois, Eastern Division
Case No. 1:09-cv-01521
Our File No. 124313.0002

Dear Deanna:

I write regarding Wolverine's duty to disclose technical information regarding the system that engaged in the five trades cited in the Amended Complaint.

Flow chart and network diagram for the system

Edge continues to have concerns about the Wolverine Defendants preparing a flow chart and network diagram in the midst of litigation for reasons we previously stated. Nonetheless, pursuant to Magistrate Judge Denlow's direction at the September 27, 2011 Status Hearing, Edge has elected to have the Wolverine Defendants produce a flow chart and network diagram as part of their initial disclosures.

As you know, the Court ordered that the Wolverine Defendants are to "give [Edge] what they want[,]" August 9 Transcript at 31, and further provided Edge "an incentive to narrow what [Edge is] looking for and go for what [Edge] really feel they need[,]" *id.* at 33. In accordance with the Court's directive, we are providing you with specific guidance as to what Edge "wants" and is "looking for" in the flow chart and network diagram. There are **three (3)** categories of information that Edge expects the flow chart and network diagram to disclose of the system that engaged in the five trades cited in the Amended Complaint.

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A. Category One – Physical Components of the System

The first category of information that Edge expects disclosed in any chart/diagram prepared by Wolverine is a depiction of the layout of the physical components (at a computer, router, or server level) of the system that were involved in or connected to each of the five trades cited in the Amended Complaint. The chart/diagram should include the following:

- (1) the physical components (at a computer, router, or server level) that received the bid and ask prices and quantities submitted by Edge to the CBOE;
- (2) the physical components (at a computer, router, or server level) that processed the information received from the CBOE;
- (3) the physical components (at a computer, router, or server level) that received price and quantity information for the security underlying each of the option contracts that were the subjects of the five trades cited in the Amended Complaint;
- (4) the physical components (at a computer, router, or server level) that calculated, looked-up, or stored values or prices for the option contracts that were the subjects of the five trades cited in the Amended Complaint;
- (5) the physical components (at a computer, router, or server level) that made the decisions to submit orders or quotes in response to the bid and ask prices submitted by Edge to the CBOE;
- (6) the physical components (at a computer, router, or server level) that generated orders or quotes to be submitted in response to the bid and ask prices submitted by Edge to the CBOE;
- (7) the physical components (at a computer, router, or server level) that performed any safety checks or verifications of the decisions to submit orders or quotes in response to the bid and ask prices submitted by Edge to the CBOE;
- (8) the physical components (at a computer, router, or server level) that were involved in the transmission of the orders or quotes submitted in response to the bid and ask prices submitted by Edge to the CBOE;
- (9) the physical components (at a computer, router, or server level) that performed any hedging in response to or in connection with the five trades cited in the Amended Complaint; and
- (10) the physical components (at a computer, router, or server level) where human traders monitored the activities of the physical components involved in or connected to the five trades cited in the Amended Complaint.

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This first category seeks a depiction of the physical components in the system at a high level, like that of Figure 1 of the '629 patent, which is offered for exemplary purposes only:

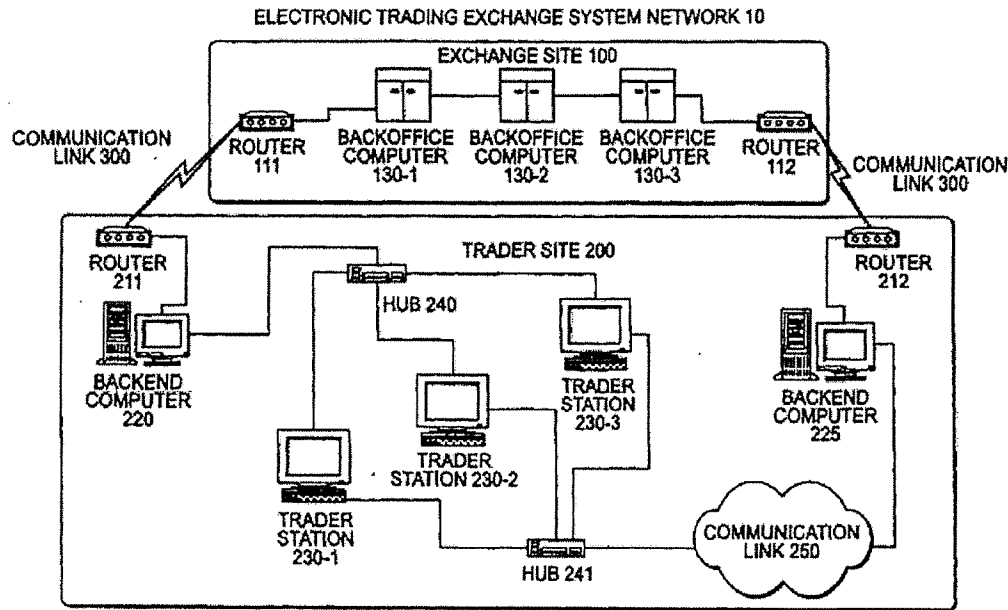


FIG. 1

In addition to describing the physical location of the above physical components of the system, the chart/diagram should show how those physical components are connected to each other. The network diagram should also provide a high-level explanation of the role each physical component had with respect to the five transactions cited in the Amended Complaint. Note that the chart/diagram should not include physical components that were not involved in or connected with the five transactions cited in the Amended Complaint.

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B. Category Two – Functional Components of the System

The second category of information that Edge expects to see depicted is the relevant functional components of the system. Figure 3 of the '629 patent provides an example of the type of illustration and information we are seeking in this category:

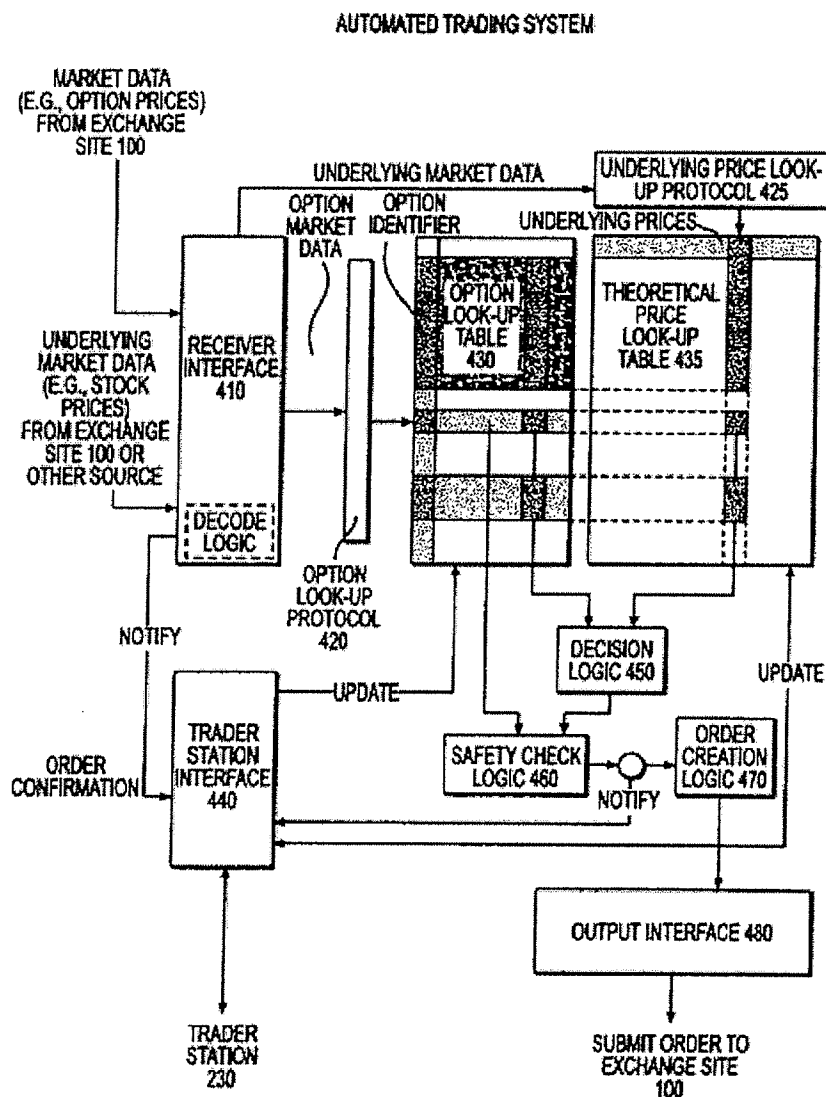


FIG. 3

For each functional component depicted, also identify the physical component(s) depicted in Category One where the functional component is found. Note again that the chart/diagram

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should not include functional components that were not involved in or connected with the five transactions cited in the Amended Complaint.

C. Category Three – Order and Timing of Steps

The third category of information that Edge expects to see depicted is the order and timing of the steps that the system took in connection with each of the five trades cited in the Amended Complaint. Figure 6 of the '629 patent provides an example of the type of illustration and information we are seeking in this category:

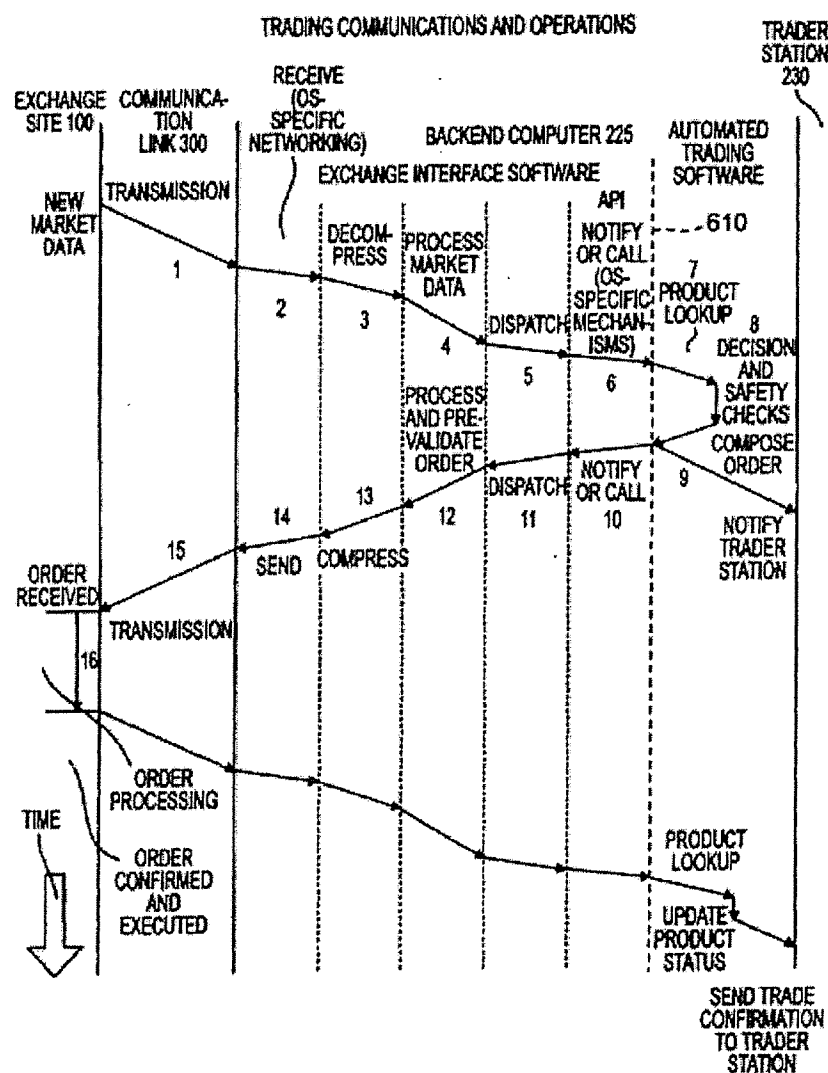


FIG. 6

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This third category of information should also disclose the time it takes for the system to perform each step followed to conduct the five trades cited in the Amended Complaint, as well as which of the physical component(s) depicted in Category One performed that step. Note that the chart/diagram should not include steps that were not taken to conduct the five transactions cited in the Amended Complaint.

Cost Associated with Creating The Chart/Diagram

We want to be closely involved with monitoring the cost associated with the production of the chart/diagram, especially considering that Edge will be paying a share of the cost to Wolverine (in line with Magistrate Judge Denlow's order) for the time its employees spend on the creation of the chart/diagram. Accordingly, please provide us with the names of all of the persons who will be involved with creating the chart/diagram, their titles (including attorneys) and anticipated roles in the creation of the chart/diagram, as well as their billing rates for the project.

We also want Wolverine to provide us with detailed progress reports, which includes any adjusted estimates and detailed explanations for the adjusted estimates, on a regular basis. Wolverine should provide us with a progress report at each \$10k mark, beginning at the \$25k mark. We further request that Wolverine send us a detailed and itemized time and expense report with each progress report, as well as at the completion of the project.

30(b)(6) Deposition

Let us know when you would like to discuss the scheduling of the 30(b)(6) deposition on the topics attached as Exhibit A. (These are the same topics that were attached to my letter of September 6.) As we have explained to you previously, the deposition topics have been carefully drafted to obtain the relevant technical information that we seek at a mid- to high-level. They are specific and detailed but they are not overbroad. The topics relate to trading activity connected to the five trades and to the system(s) that engaged in those trades.

As soon as we have an agreement on the date and location of the deposition, we will formally serve Wolverine with a 30(b)(6) deposition notice. You already have our topics so you are in a position to begin preparing Wolverine's corporate designees for the deposition.

Dr. Nelken

We will want to share the chart/diagram with Dr. Nelken and bring him to the deposition of Wolverine. Please confirm that we may do so. Note that we will not address source code or the specifics of Wolverine's pricing algorithms during the deposition.

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Sincerely,

ROBINS, KAPLAN, MILLER & CIRESI L.L.P.

A handwritten signature in black ink, appearing to read "Sang Young Brodie". The signature is stylized with a large, sweeping initial "S" and a distinct "Y".

Sang Young Brodie

EXHIBIT A

WOLVERINE - DEPOSITION TOPICS FOR INITIAL DISCLOSURES

TOPIC NO. 1: The identification of each system that performed one or more trades cited in the Amended Complaint, including but not limited to:

- a. the system name, model number or other relevant identifiers;
- b. the identity of the software (including version) used by the system(s) on January 27, 2009 to conduct the trades cited in the Amended Complaint; and
- c. the operating system (including version) used by the system(s) on January 27, 2009 to conduct the trades cited in the Amended Complaint.

TOPIC NO. 2: A general description the main computing and storage components of the system(s) identified in Topic No. 1—e.g., computers, servers, workstations—in terms of their hardware configuration (i.e., technical specifications), location, functionality, and network interfaces or connections.

TOPIC NO. 3: A general description of how the systems identified in Topic No. 1 receive information from and send information to the CBOE, or receive information about the underlying security from other data sources (e.g., exchanges other than the CBOE), including a general description of the network that connects the system(s) to the CBOE and a general description of the path(s) transmissions (to and from the CBOE) follow through the network.

TOPIC NO. 4: For the following Trade—

Table 1

Series (Options Contract)	Trade ID	Trade Price	Approximate Trade Time (Central)	Trade Qty
OEX OEW FEB09 340.00 P P/S: 07/10	87336:212757 3315	\$2.75	09:41:13	1

—high- and mid-level facts relating to how your system engaged in the Trade [this topic is not directed to the details of models, equations, calculations, algorithms, or software routines used], including:

- (1) how the system received information about the Options Contract, including the Ask Price (the Ask Price is identical to the Trade Price in Table 1) and quantity for the Trade, after such information was submitted by the account associated with acronym GRF and disseminated by the CBOE electronic exchange, including the identification of the physical components(s) of the system and of the software application(s) or platform(s) that interface with the CBOE

electronic exchange or with the equipment that provides said information to your system;

- (2) how the system received price and quantity information for the security underlying the Options Contract, and the source of that information;
- (3) the steps the system took to distribute all or some of the information in (1) and (2) through the system, such as storing said information for later use, inputting all or some of said information into data structure(s) (such as look up tables or linked lists), or passing all or some of said information to certain software applications or platforms in the system;
- (4) the steps the system took, if any, to calculate a value related to the implied volatility for the Ask Price of the Options Contract [this subtopic is not directed to the details of the models, equations, calculations, algorithms, or software routines used];
- (5) the steps the system took to search for or look up (a) a price for the Options Contract that is based on a model or equation used by the system or (b) a value related to the implied volatility of the Options Contract other than the value identified in (4), including the use of search protocols, databases, or tables [this subtopic is not directed to the details of the algorithms or software routines used];
- (6) the steps the system took to calculate (a) a price for the Options Contract that is based on a model or equation used by the system or (b) a value related to the implied volatility of the Options Contract other than the value identified in (4), including the use of computational algorithms, interpolation and/or extrapolation [this subtopic is not directed to the details of the models, equations, calculations, algorithms, or software routines used];
- (7) the steps the system took to determine whether any of the information received from the exchange, including the Ask Price, fell within a range acceptable to the system to submit an order or quote to buy the Options Contract at that Ask Price, including:
 - a. any comparison of the Ask Price or the value related to the implied volatility of the Ask Price (as calculated in (4)) with the price or the value related to the implied volatility that the system derived for the Options Contract (as described in (5) and (6));

- b. any other steps the system took to make a decision to buy the Options Contract at the Ask Price [this subtopic is not directed to the details of the models, equations, calculations, algorithms, or software routines used];
- (8) the steps the system took to confirm, if any, the decision made by the system to buy the Options Contract at the Ask Price, such as: checks on the price and quantity of the Options Contract, checks on trade limits for the Options Contract, checks on the total Delta, and checks on the price and quantity of the underlying security for the Options Contract;
- (9) the steps the system took to compose an order or quote for transmission to the CBOE exchange to buy the Options Contract at the Ask Price, including:
 - a. the steps the system took to create the order or quote [this subtopic is not directed to the details of the algorithms or software routines used];
 - b. the steps the system took to interface with the CBOE electronic exchange and transmit the order or quote to the CBOE electronic exchange [this subtopic is not directed to the details of the algorithms or software routines used];
- (10) the steps the system took to receive confirmation of the Trade from the CBOE electronic exchange and record information about the Trade [this subtopic is not directed to the details of the algorithms or software routines used]; and
- (11) the steps the system took, if any, to hedge risk associated with the Trade [this subtopic is not directed to the details of the models, equations, calculations, algorithms, or software routines used].

TOPIC NO. 5: The identification and location of the physical component(s) of the system and software application(s) and platform(s) that performed the steps described in Topic No. 4.

TOPIC NO. 6: The speed and known latencies (in milliseconds and microseconds) at which the system performed the steps covered by Topic No. 4, from the time the system received information about the Options Contract identified in Topic No. 4 to the time the system transmitted an order or quote to the CBOE electronic exchange to buy the Options Contract. This topic further covers any time stamping or time logging that your system performed in connection with the Trade identified in Topic No. 4.

TOPIC NO. 7: General facts relating to how your trader(s) monitored the trading activity covered by Topic No. 4, including the use of computers, how those computers are connected to or within the system, and the location of where the monitoring took place.

TOPIC NO. 8: The topics covered by Topic Nos. 4-7 but as they apply to each of the Trades in Tables 2 - 4:

Table 2

Series (Options Contract)	Trade ID	Trade Price	Approximate Trade Time (Central)	Trade Qty
AWI AWI FEB09 15:00 P P/S: 04/01	87336:210759 4410	\$0.25	10:07:23	1

Table 3

Series (Options Contract)	Trade ID	Trade Price	Approximate Trade Time (Central)	Trade Qty
CBY CBY FEB09 35.00 C P/S: 04/01	87336:210759 5031	\$0.60	10:13:43	1

Table 4

Series (Options Contract)	Trade ID	Trade Price	Approximate Trade Time (Central)	Trade Qty
CBY CBY MAR09 40.00 C P/S: 04/01	87336:210759 5589	\$0.25	10:18:39	1

TOPIC NO. 9: For the following Trade—

Table 5

Series (Options Contract)	Trade ID	Trade Price	Approximate Trade Time (Central)	Trade Qty
CEC CEC FEB09 30.00 C P/S: 04/01	87336:210759 4747	\$0.65	10:09:13	1

—high- and mid-level facts relating to how your system engaged in the Trade [this topic is not directed to the details of models, equations, calculations, algorithms, or software routines used], including:

- (1) how the system received information about the Options Contract, including the Bid Price (the Bid Price is identical to the Trade Price in Table 5) and quantity for the Trade, after such information was submitted by the account associated with acronym GRF and disseminated by the CBOE electronic exchange, including the identification of the physical components(s) of the system and of the software application(s) or platform(s) that interface with the CBOE electronic exchange or with the equipment that provides said information to your system;

- (2) how the system received price and quantity information for the security underlying the Options Contract, and the source of that information;
- (3) the steps the system took to distribute all or some of the information in (1) and (2) through the system, such as storing said information for later use, inputting all or some of said information into data structure(s) (such as look up tables or linked lists), or passing all or some of said information to certain software applications or platforms in the system;
- (4) the steps the system took, if any, to calculate a value related to the implied volatility for the Bid Price of the Options Contract [this subtopic is not directed to the details of the models, equations, calculations, algorithms, or software routines used];
- (5) the steps the system took to search for or look up (a) a price for the Options Contract that is based on a model or equation used by the system or (b) a value related to the implied volatility of the Options Contract other than the value identified in (4), including the use of search protocols, databases, or tables [this subtopic is not directed to the details of the algorithms or software routines used];
- (6) the steps the system took to calculate (a) a price for the Options Contract that is based on a model or equation used by the system or (b) a value related to the implied volatility of the Options Contract other than the value identified in (4), including the use of computational algorithms, interpolation and/or extrapolation [this subtopic is not directed to the details of the models, equations, calculations, algorithms, or software routines used];
- (7) the steps the system took to determine whether any of the information received from the exchange, including the Bid Price, fell within a range acceptable to the system to submit an order or quote to sell the Options Contract at that Bid Price, including:
 - a. any comparison of the Bid Price or the value related to the implied volatility of the Bid Price (as calculated in (4)) with the price or the value related to the implied volatility that the system derived for the Options Contract (as described in (5) and (6));
 - b. any other steps the system took to make a decision to sell the Options Contract at the Bid Price [this subtopic is not directed to the details of the models, equations, calculations, algorithms, or software routines used];

- (8) the steps the system took to confirm, if any, the decision made by the system to sell the Options Contract at the Bid Price, such as: checks on the price and quantity of the Options Contract, checks on trade limits for the Options Contract, checks on the total Delta, and checks on the price and quantity of the underlying security for the Options Contract;
- (9) the steps the system took to compose an order or quote for transmission to the CBOE exchange to sell the Options Contract at the Bid Price, including:
 - a. the steps the system took to create the order or quote [this subtopic is not directed to the details of the algorithms or software routines used];
 - b. the steps the system took to interface with the CBOE electronic exchange and transmit the order or quote to the CBOE electronic exchange [this subtopic is not directed to the details of the algorithms or software routines used];
- (10) the steps the system took to receive confirmation of the Trade from the CBOE electronic exchange and record information about the Trade [this subtopic is not directed to the details of the algorithms or software routines used]; and
- (11) the steps the system took, if any, to hedge risk associated with the Trade [this subtopic is not directed to the details of the models, equations, calculations, algorithms, or software routines used].

TOPIC NO. 10: The identification and location of the physical component(s) of the system and software application(s) and platform(s) that performed the steps described in Topic No. 9.

TOPIC NO. 11: The speed and known latencies (in milliseconds and microseconds) at which the system performed the steps covered by Topic No. 9, from the time the system received information about the Options Contract identified in Topic No. 9 to the time the system transmitted an order or quote to the CBOE electronic exchange to sell the Options Contract. This topic further covers any time stamping or time logging that your system performed in connection with the Trade identified in Topic No. 9.

TOPIC NO. 12: General facts relating to how your trader(s) monitored the trading activity covered by Topic No. 9, including the use of computers, how those computers are connected to or within the system, and the location of where the monitoring took place.

Larson, Michael J.

From: Beasley, Tony G.
Sent: Thursday, November 10, 2011 11:43 AM
To: 'Deanna.Keysor@kayescholer.com'; 'Robert.Unikel@kayescholer.com';
'Michelle.Marek@kayescholer.com'
Cc: Meghjee, Munir R.; Brodie, Sang Young; Nielsen, Seth A.
Subject: Edge v. Barclays et al. - Letter
Attachments: 11-10-2011 Letter to Keysor.PDF; keysorltr0.PDF

Counsel:

Please see attached letter.

Thanks,

Tony Beasley
Associate
ROBINS, KAPLAN, MILLER & CIRESI L.L.P.
Phone: 612.349.0181
E-mail: agbeasley@rkmc.com

11/10/2011